DII COE Reserved Words

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NT Advisory Group

Outline

- Task
- Integration & Runtime Specification (I&RTS)
- User Interface Specification for the DII
- Joint Technical Architecture (JTA)
- Window NT and Windows 95 Logo Program
- Window NT 5.0 and Windows 98 Logo Program
- Conclusions
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Task

- DII COE Reserved Words
  - Examine the implementation of Reserved Words and how they are to be accommodated into the NT registry database.
  - Examine if the current structure needs to be changed to accommodate the Microsoft Logo Program.

Integration & Runtime Specification (I&RTS)

- Each segment is assigned a unique subdirectory underneath /h called the *segment's assigned directory*.
  - Serves to uniquely identify each segment
  - Too cumbersome for use in naming public symbols.
- Each segment is also assigned a 1-6 character alphanumeric string called the *segment prefix*.
  - Name executables
  - Used for naming environment variables
  - Public APIs
  - Public or shared libraries where naming conflicts with other segments must be avoided

Integration & Runtime Specification (I&RTS)

- **Reserved are the following Environment Variables**

Environment Variable　　**Usage**

COE_SYS_NAME　　string containing system name (e.g., "GCCS")

+COE_TMPSPACE　　location of temporary space

*DATA_DIR　/h/data

DISPLAY　current display surface (UNIX only)

HOME user's login directory

+INSTALL_DIR　　absolute pathname to where segment was installed

*LD_LIBRARY_PATH　default location of shared X and Motif libraries (UNIX only)

*LOGNAME　user's login account name

*LOG_NAME　user's login account name

*LOGIN_NAME user's login account name

*MACHINE_CPU　　CPU type derived from uname -m

*MACHINE_OS Operating system derived from uname -s

Legend: * Environment variables set by the parent COE-component segment.

+ Environment variables set by the COE installation

Integration & Runtime Specification (I&RTS)

Environment Variable   **Usage**

`path` list of paths to search to find an executable

`SHELL`   shell used (e.g., /bin/csh) (UNIX only)

`⁺SYSTEM_ROOT`   absolute pathname to Windows Directory (PC-COE only)

`TERM` terminal type (UNIX only)

`*TMPDIR`   location of the system-defined temporary directory

`*TZ`   time zone information (UNIX only)

`USER` user's login account name

`USER_DATA`   user's data directory under /h/USERS/local

`USER_HOME`   user's home directory under /h/USERS/local

`USER_PROFILE`   user's current profile under /h/USERS/local/Profiles

`*XAPPLRESDIR`   `/h/data/app-defaults` (UNIX only)

`*XENVIRONMENT`   `/h/data/app-defaults/COEBaseEnv` (UNIX only)

`*XFONTSDIR` `/h/data/fonts` (UNIX only)

Legend: * Environment variables set by the parent COE-component segment.

⁺ Environment variables set by the COE installation

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Integration & Runtime Specification (I&RTS)

- Additional reserved segment prefixes listed in Chapter 6

Environment Variable	Usage
NT	Generic NT segments
WIN	Generic Windows segments
Win95	Windows 95 segments
WINNT	Windows NT segments for 80x86 platforms

- Segments shall not alter these environment variables   except as permitted by environment extension files

- Reserved environment variables apply to both UNIX and NT DII COE systems, except where noted

User Interface Specification for the DII

- No direct reference to reserved words
- States must be I&RTS compliant

Joint Technical Architecture (JTA)

- No direct reference to reserved words
- States must be I&RTS compliant

Window NT and Windows 95 Logo Program

- The Windows NT equivalent of reserved words are called keywords
- Neither keywords or environment variables are reserved for the NT Operating System
- Up to developer to ensure no duplication of:
  - Common or shared files
  - Environment variables
  - Required unique registry keys & subkeys
- Keywords are clearly defined for applications and development environments

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Window NT and Windows 95 Logo Program (Con't)

- Windows NT Core components
  - Files which are installed by the operating system during a full installation
  - Considered operating system upgrades (for example, DirectX™, Direct3D™). This includes such things as DLLs which are installed by applets.
  - List is dynamic, core components for Windows NT and Windows 95, see http://www.microsoft.com/windows/thirdparty/winlogo/.

Window NT and Windows 95 Logo Program (Con't)

- Recent program changes to minimize installation and operational problems:
  - **Required:**
    The application must default installation to a directory (or directories) under "drive:\Program Files". The installer must query the registry for this directory path to ensure appropriate install if, for example, a user has renamed this directory on their machine, or if the application is being installed onto a non-English language, localized version of Windows.

  - **Required:**
    The application's installer must not install application DLLs or executables under the system root.

Window NT and Windows 95 Logo Program (Con't)

- **Recommended:**
  It is strongly recommended that applications do not write anything to the \system32 directory. On Windows NT 5.0 the OS will support a mode in which this directory will be read-only and unavailable to applications & installers. This will be part of the Zero Administration Windows effort to reduce DLL conflicts and other shared component problems.

- **Recommended:**
  It is strongly recommended that if your application requires updated system DLLs or other core components you must ship a self-extracting EXE from Microsoft which will handle installation of these components. Applications are strongly discouraged from installing system components or install into Windows\system32 by any other means than Microsoft provided service packs.

Window NT and Windows 95 Logo Program (Con't)

- Microsoft will distribute **all** new DLLs by means of service packs only. Vendors should distribute self-extracting EXEs from Microsoft rather than the latest DLLs.

- Environment variables
  - COMPUTERNAME=DAD
  - ComSpec=O:\WINNT\system32\cmd.exe
  - HOMEDRIVE=n:
  - HOMEPATH=\1_working
  - LOGONSERVER=\\DAD
  - NUMBER_OF_PROCESSORS=1
  - OS=Windows_NT
  - Os2LibPath=O:\WINNT\system32\os2\dll;

Window NT and Windows 95 Logo Program (Con't)

- Environment variables

  - Path=O:\WINNT\system32;O:\WINNT;N:\pwrs5\Sys32;N:\SQLANY50\win32;n:\
  - PATHEXT=.COM;.EXE;.BAT;.CMD
  - PROCESSOR_ARCHITECTURE=x86
  - PROCESSOR_IDENTIFIER=x86 Family 5 Model 6 Stepping 2, AuthenticAMD
  - PROCESSOR_LEVEL=5
  - PROCESSOR_REVISION=0602
  - PROMPT=PG
  - SystemDrive=O:
  - SystemRoot=O:\WINNT
  - TEMP=O:\TEMP
  - USERDOMAIN=DAD
  - USERNAME=eric
  - USERPROFILE=O:\WINNT\Profiles\eric
  - windir=O:\WINNT

Window NT 5.0 and Windows 98 Logo Program

- There are no new keyword or related guidelines or requirements in the draft Logo Program with one exception
  - Hide program files and directories that users do not need to see. (Best Practice)

Conclusions

- The I&RTS contains the only OS oriented reserved word list
  - Segment Directory
  - Segment Prefix
  - Environment variables
- The Windows NT Logo Program has recently taken action to minimize naming conflicts
- Logo Program leaves resolving naming conflicts up the developer

Conclusions (Con't)

- Environment Variables

I&RTS	Standard NT
COE_SYS_NAME	None
+COE_TMPSPACE	None
*DATA_DIR	None
HOME	HOMEPATH & HOMEDRIVE
	HOMESHARE
+INSTALL_DIR	InstallSource (registry)
*LOGNAME	USERNAME
*MACHINE_CPU	PROCESSOR_ARCHITECURE
	PROCESSOR_IDENTIFIER
	PROCESSOR_LEVEL
	PROCESSOR_REVISION
*MACHINE_OS	OS

Conclusions (Con't)

Environment Variables Con't

I&RTS	Standard NT
path PATH	
SHELL	COMSPEC (UNIX only)
+SYSTEM_ROOT	SystemRoot (WinDir)
*TMPDIR	TEMP
USER_DATA	None
USER_HOME	None
USER_PROFILE	USERPROFILE
None	USERDOMAIN
None	COMPUTERNAME
None	PATHEXT
None	SystemDrive

Recommendations

- Continue centralized DII COE list of known reserved words

- Add reserved environment variables, to Web site

- Revise I&RTS with current Windows NT keywords

- Work with DISA to resolve environment variable differences

- Recommend to Microsoft that reserved keywords for Windows NT OS be added to developers network